What is claimed is:

1. A thermal barrier comprising:

a first barrier layer;

a second barrier layer;

a base material positioned between the first barrier layer and the second barrier layer, wherein the base material comprises a plurality of regions and a barrier zone separating the regions; and

a non-encapsulated phase change material impregnating one or more of the regions, wherein the barrier zone hinders migration of the phase change material in its liquid state within the base material, and wherein the first barrier layer is bonded to the second barrier layer to enclose the base material.

2. The thermal barrier of claim 1, wherein the regions comprise a porous material.

3. The thermal barrier of claim 1, wherein the regions comprise a material independently selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene, phenolic, polyvinyl chloride, cellulose, cotton, silica, styrene devinylbenzene copolymer, polyacrylamide, polyacrylamide copolymer, agarose gel, hydroxyapatite, alumina, celotex, methyl cellulose, carboxymethyl cellulose, poly-N-vinyl-2-pyrrodine, poly-N-vinyl-2-pyrrodine copolymer, hydrogel, dextran, starch grafted polyacrylate, down, and ethylene oxide.

4. The thermal barrier of claim 1, wherein the barrier zone is impermeable to the phase change material in its liquid state.

5. The thermal barrier of claim 1, wherein the base material is a foam, sheet, film, or fabric.

6. The thermal barrier of claim 1, wherein the base material further comprises a first surface and a second surface, and wherein the barrier zone extends between the first surface and the second surface.

7. The thermal barrier of claim 6, wherein the first surface and the second surface comprise a first bonding area and a second bonding area, respectively, and wherein the barrier zone extends between the first bonding area and the second bonding area.

8. The thermal barrier of claim 7, wherein the barrier zone is formed by applying thermal energy or electromagnetic energy to at least one of the first bonding area and the second bonding area.

9. The thermal barrier of claim 7, wherein the first barrier layer and the second barrier layer are bonded to the base material at the first bonding area and the second bonding area, respectively.

10. The thermal barrier of claim 1, wherein the phase change material is selected from the group consisting of paraffinic hydrocarbons, halogenated hydrocarbons, waxes, oils, hydrated salts, water, fatty acids, fatty acid esters, dibasic acids, dibasic esters, 1-olefins, 1-halides, primary alcohols, alicyclic hydrocarbons, aromatic compounds, clathrates, semi-clathrates, gas clathrates, stearic anhydride, ethylene carbonate, polyethlyene glycol, and mixtures thereof.

11. The thermal barrier of claim 1, further comprising a second non-encapsulated phase change material impregnating a remaining one or more of the regions, wherein the first phase change material and the second phase change material are different, and wherein the barrier zone further hinders migration of the second phase change material in its liquid state within the base material.

12. The thermal barrier of claim 1, wherein the barrier layers are flexible films.

13. The thermal barrier of claim 1, wherein the barrier layers comprise a polymeric material independently selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene, phenolic, polyvinyl chloride, natural rubber, and synthetic rubber.

14. The thermal barrier of claim 1, wherein at least one of the barrier layers is thermally reflective.

15. The thermal barrier of claim 14, wherein said thermally reflective barrier layer comprises a thermally reflective layer or coating.

16. A thermal barrier comprising:

a first barrier layer;

a second barrier layer;

a plurality of base materials positioned between the first barrier layer and the second barrier layer; and

a non-encapsulated phase change material dispersed within one or more of the base materials, wherein the first barrier layer is bonded to the second barrier layer to enclose the base materials within respective compartments.

17. The thermal barrier of claim 16, wherein the base materials are independently foams, sheets, films, fabrics, fibers, pellets, or particles.

18. The thermal barrier of claim 16, wherein the base materials comprise a material independently selected from the group consisting of porous materials and non-porous materials.

19. The thermal barrier of claim 16, wherein the phase change material is a liquid/solid phase change material or a mixture of liquid/solid phase change materials.

20. The thermal barrier of claim 16, further comprising a second non-encapsulated phase change material dispersed within a remaining one or more of the base materials, and wherein the first phase change material and the second phase change material are different.

21. The thermal barrier of claim 16, wherein the barrier layers are films that are impermeable to the phase change material in its liquid state.

22. The thermal barrier of claim 16, wherein the barrier layers comprise a polymeric material independently selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene, phenolic, polyvinyl chloride, natural rubber, and synthetic rubber.

23. The thermal barrier of claim 16, wherein at least one of the barrier layers is thermally reflective.

24. The thermal barrier of claim 23, wherein said thermally reflective barrier layer comprises a thermally reflective layer or coating.

25. A method of forming a thermal barrier, comprising:

(a) impregnating an untreated base material with a non-encapsulated phase change material;

(b) applying thermal energy or electromagnetic energy to the impregnated base material to form a base material comprising a plurality of regions and a barrier zone separating the regions, wherein the regions are impregnated with the phase change material, and wherein the barrier zone hinders migration of the phase change material in its liquid state within the base material;

(c) positioning the base material between a first barrier layer and a second barrier layer; and

(d) bonding the first barrier layer to the second barrier layer to enclose the base material to form the thermal barrier.

26. The method of claim 25, wherein the untreated base material in (a) comprises a porous material.

27. The method of claim 25, wherein the untreated base material in (a) comprises a material selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene,

phenolic, polyvinyl chloride, cellulose, cotton, silica, styrene devinylbenzene copolymer, polyacrylamide, polyacrylamide copolymer, agarose gel, hydroxyapatite, alumina, celotex, methyl cellulose, carboxymethyl cellulose, poly-N-vinyl-2-pyrrodine, poly-N-vinyl-2-pyrrodine copolymer, hydrogel, dextran, starch grafted polyacrylate, down, and ethylene oxide.

28. The method of claim 25, wherein the untreated base material in (a) is a foam, sheet, film, or fabric.

29. The method of claim 25, wherein the barrier zone is impermeable to the phase change material in its liquid state.

30. The method of claim 25, wherein the base material in (b) further comprises a first surface and a second surface, and wherein the barrier zone extends between the first surface and the second surface.

31. The method of claim 30, wherein the first surface and the second surface comprise a first bonding area and a second bonding area, respectively, and wherein the barrier zone extends between the first bonding area and the second bonding area.

32. The method of claim 31, wherein the thermal energy or electromagnetic energy is applied to at least one of the first bonding area and the second bonding area.

33. The method of claim 31, further comprising bonding the first barrier layer and the second barrier layer to the base material at the first bonding area and the second bonding area, respectively.

34. The method of claim 25, wherein the phase change material is selected from the group consisting of paraffinic hydrocarbons, halogenated hydrocarbons, waxes, oils, hydrated salts, water, fatty acids, fatty acid esters, dibasic acids, dibasic esters, 1-olefins, 1-halides, primary alcohols, alicyclic hydrocarbons, aromatic compounds, clathrates, semi-clathrates, gas clathrates, stearic anhydride, ethylene carbonate, polyethlyene glycol, and mixtures thereof.

35. The method of claim 25, wherein the barrier layers are flexible films.

36. The method of claim 25, wherein the barrier layers comprise a polymeric material independently selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene, phenolic, polyvinyl chloride, natural rubber, and synthetic rubber.

37. The method of claim 25, wherein at least one of the barrier layers is thermally reflective.

38. The method of claim 37, wherein said thermally reflective barrier layer comprises a thermally reflective layer or coating.

39. A method of forming a thermal barrier, comprising:

(a) impregnating an untreated base material with a non-encapsulated phase change material;

(b) partitioning the impregnated base material into a plurality of base materials impregnated with the phase change material;

(c) positioning the base materials between a first barrier layer and a second barrier layer; and

(d) bonding the first barrier layer to the second barrier layer to form the thermal barrier, wherein the first barrier layer is bonded to the second barrier layer to enclose the base materials within respective compartments.

40. The method of claim 39, wherein the untreated base material in (a) comprises a porous material.

41. The method of claim 39, wherein the untreated base material in (a) is a foam, sheet, film, or fabric.

42. The method of claim 39, wherein the phase change material is a liquid/solid phase change material or a mixture of liquid/solid phase change materials.

43. The method of claim 39, wherein the barrier layers are films that are impermeable to the phase change material in its liquid state.

44. The method of claim 39, wherein the barrier layers comprises a polymeric material independently selected from the group consisting of polyurethane, ethylene/vinyl acetate copolymer, latex, polyethylene, polypropylene, butyl, silicone, cellulose acetate, neoprene, epoxy, polystyrene, phenolic, polyvinyl chloride, natural rubber, and synthetic rubber.

45. The method of claim 39, wherein at least one of the barrier layers is thermally reflective.

46. The method of claim 45, wherein said thermally reflective barrier layer comprises a thermally reflective layer or coating.